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Hesterman

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[54] **NONDESTRUCTIVE M-H HYSTERESIS TESTERS FOR MAGNETIC DISCS FOR COMPUTER DISC DRIVES**

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[58] **Field of Search** 324/202, 207, 208, 210–212, 324/222, 223, 225, 228–234, 238–243

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[57] **ABSTRACT**

The manufacture of digital magnetic recording discs for computer disc drives requires the monitoring and control of the M-H hysteresis loop properties of the magnetic film deposited on the disc substrate. Several methods exist for measuring this M-H hysteresis loop, but they all have serious disadvantages. One method consists of cutting samples and measuring them with a vibrating sample magnetometer. This is a destructive test and requires a lot of time per sample. Another method uses the Kerr-rotation of polarized light. However, it samples only the mangetization of the surface and cannot determine the magnetic thickness of the film. A third method magnetizes the entire disc and samples a large region along a diameter. This method cannot distinguish between the top and bottom films of the disc, and cannot resolve circumferential variations of th M-H loop properties. The method of this invention solves these problems by measuring a small part of one surface of the disc nondestructively using a special balanced head having two air gaps. It is fast, requiring only about 2 minutes per measurement and has good reproducability.

5 Claims, 3 Drawing Sheets